IN THE SPECIFICATION:

Please replace the current paragraph [0005] with the following:

[0005] A high voltage circuit breaker when removed from service for maintenance, testing, or other reason may be grounded on both sides for personnel safety precautions. Circuit breaker contact timing measurements may be affected by induced currents, voltages, or other disturbances in a high voltage environment where circuit breaker measurement typically is performed. Moreover, such disturbances may limit the effectiveness and/or portability of the test equipment. In addition, motion measurement may be complicated by mechanical difficulties when mounting the transducer to the circuit breaker and when measuring rapid mechanical acceleration during circuit breaker operation. Additionally, the material used in fabricating the circuit breaker contact may also adversely affect the timing result.

Please replace the current paragraph [0027] with the following:

[0027] During testing, with the breaker contacts in an open state, source 302 injects ~~a high frequency sine wave signal into the circuit breaker~~ a periodic signal, for example, a sine wave or a non-periodic signal having a shape that includes one or more high frequency component into the circuit breaker. Output 312 receives a signal that corresponds to circuit 200 with a minimum capacitance value for capacitor 202. The minimum capacitance value occurs when circuit breaker contacts represented by capacitor 202 are open. The circuit breaker is commanded to close and the movable contact begins moving toward the non-movable contact. As the movable contact travels closer to the non-movable contact, the capacitance of capacitor 202 increases ~~proportionally~~ in relation to the distance traveled. The ~~maximum~~ capacitance value ~~occurs~~ just prior to the time when the movable contact electrically touches the non-movable contact may be used for analysis of contact movement, contact status and other parameters that may indicate that the circuit breaker may not operate as designed. ~~The maximum capacitance value of circuit 200 corresponds to a maximum value of output voltage 312. The maximum value of output voltage 312 may be obtained by~~

~~differentiating the output voltage function Vout(t) with respect to time and setting the equation to be equal to zero. Mathematically the equation is:~~ The capacitance as function of time can be calculated using the equation:

~~$$Vo(t) = Vg(t) - \left\{ (L_a + L_b)\frac{di_g(t)}{dt} + (R_a + R_b)i_g + \frac{1}{C}\int_0^{t0} i_g\,dt \right\}$$~~

$$Vo(t) = Vg(t) - \left\{ (L_a + L_b)\frac{di_g(t)}{dt} + (R_a + R_b)i_g(t) + \int_{t_0}^{t} \frac{i_g(\tau)}{C(\tau)}\,d\tau \right\}$$

or by use of a high frequency component, ω, of the signal for every t during breaker operation using the following equation:

$$Vo(\omega,t) = Vg(\omega,t) - \left(j\omega(L_a + L_b) + (R_a + R_b) + \frac{1}{j\omega C(t)} \right) i_g(\omega,t)$$

Then, by equating result to zero, capacitance C is given by:

$$C = \frac{i_g}{Vg - L\frac{d^2 i_g}{dt^2} - R\frac{di_g}{dt}}$$

Where $L = L_a + L_b$ and $R = R_a + R_b$